IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor:	Brad A. Armstrong	Docket No.:	F2811
Serial No.:	10/773,025	Art Unit:	2629
Filed:	February 4, 2004	Examiner:	William Boddie
For:	Image Controller		

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

This is an appeal from the Examiner rejection of the above-identified application as set forth in the Office Action dated September 7, 2010 ("Office Action"), wherein this application is rejected for the fifth time. A Notice of Appeal was filed in this Application on January 25, 2011.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37(c) and M.P.E.P. § 1205.02:

I. Real Party In Interest
II Related Appeals and Interferences
III. Status of Claims
IV. Status of Amendments
V. Summary of Claimed Subject Matter
VI. Grounds of Rejection to be Reviewed on Appeal
VII. Argument
Claims Appendix
Evidence Appendix
Related Proceedings Appendix

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

Anascape, Ltd.

II. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings known to Appellants, Appellants' legal representative or assignee which may be related to, directly affect or have a bearing on the Board's decision in this appeal, with the exception of the following patent appeals and litigation:

Appeal of U.S. Patent Application Serial No. 11/150,412: an appeal brief was filed on September, 9, 2010; the Examiner's answer was issued on November 26, 2010; and a reply brief and request for oral hearing was filed on January 25, 2011. The Board has not yet rendered a decision in this appeal.

Appeal of U.S. Patent Application Serial No. 11/240,327: a notice of appeal was filed on January 25, 2011; and an appeal brief for application 11/240,327 is being filed concurrently herewith. Accordingly, the Board has not yet rendered a decision in this appeal.

Appeal of U.S. Patent Application Serial No. 11/240,331, notice of appeal was filed January 25, 2011; and an appeal brief for application 11/240,331 is being filed concurrently herewith. Accordingly, the Board has not yet rendered a decision in this appeal.

Anascape, Ltd. v. Microsoft Corp., et al., filed in the United States District Court for the Eastern District of Texas, Lufkin Division ("District Court") and assigned civil action number 9:06-CV-00158-RC. Anascape has previously notified the Office of this litigation, which involved Anascape patents that shared a common ancestor with the present application. Anascape settled with Microsoft Corporation prior to trial, and a trial involving the only other defendant, Nintendo of America, Inc., ("Nintendo") took place in May 2008. Nintendo was found to infringe Anascape's U.S. Patent No. 6,906,700 ("the '700 patent") at trial.

Nintendo appealed the District Court's final judgment to the United States Court of Appeals for the Federal Circuit ("CAFC") where the case was restyled as *Anascape, Ltd. v. Nintendo of America, Inc.*, and assigned case number 2008-1500. The CAFC reversed the district court's judgment in an opinion issued April 13, 2010. Anascape's subsequent petition for

rehearing *en banc* at the CAFC and petition for writ of certiorari at the United States Supreme Court were both denied.

Copies of the decisions rendered in connection with this litigation are attached hereto in the Related Proceedings Appendix.

III. STATUS OF CLAIMS

Claims 1-8 are canceled.

Claims 9-19 are pending in the application and each has been rejected.

The rejections of claims 9-19 are being appealed.

A Claims Appendix is attached to this Brief.

IV. STATUS OF AMENDMENTS

No amendments have been filed by Appellant subsequent to the Office Action, and all previously filed amendments have been entered by the Examiner.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A summary of the subject matter defined in each of the independent claims, with reference to exemplary embodiments in the specification by page and line number and in the drawings by reference characters, is provided below.

Claim 9 describes an image controller (9, 172) allowing control of an image generation device (148) capable of creating three-dimensional imagery (152). The specification discloses multiple embodiments of the image controller in Figures 1-3, 8, 9, 12, 20, 21, 30, 31, 32, and 36 and in the Specification at (image controller) page 10, line 15 - page 12, line 1; page 17, lines 3-14; page 27, lines 9-15; page 28, lines 3-12; page 43, lines 1-11; page 53, line 15 - page 54, line 3; and page 62, lines 19-22; (image generation device) page 10, lines 15-18; page 11, lines 4-12; page 40, lines 7-17; page 41, lines 19-22; page 42, lines 13-20; page 68, lines 11-15; and (three-dimensional imagery) page 10, line 18 - page 11, line 12; page 11, line 21 - page 12, line 1; page 41, line 18; and page 42, lines 13-15.

The image controller (9, 172) comprises a single input member (12, 174, 300, 400, 500) capable of being manipulated in six degrees of freedom by a human hand to control movement of

the three-dimensional imagery (152). Figures 1-6, 8, 9, 11, 12, 20, 21, 31, 32, and 36 and Specification at page 27, lines 9-15; page 43, lines 1-11; page 54, lines 4-6; page 61, lines 6-14; and page 62, lines 19-22.

The image controller (9, 172) further comprises a circuit board (20, 206, 250, 322, 422, 523). Figures 2, 3, 15, 16, 22, 34, 36, and 45-47, and Specification at page 29, lines 9-12; page 40, lines 16-17; page 49, lines 12-20; page 56, lines 6-13; page 57, 16-18; page 61, lines 6-11; page 63, lines 4-5; and page 70, lines 17-20.

A proportional sensor (124, 207) located on the circuit board (20, 206, 250, 322, 422, 523). The proportional sensor (124, 207) indicates manipulation of the single input member (12, 174, 300, 400, 500). Figure 2, 3, 12, 20-28, and 32-36 and Specification at page 31, lines 2-5; page 32, lines 3-6; page 56, line 1 - page 59, line 15; and page 61, lines 6-11.

The image controller (9, 172) further comprises a secondary input member (16) capable of being controlled by the human hand to effect bidirectional movement of the three dimensional imagery (152) on at least one axis independent of the control of three-dimensional imagery (152) by the single input member (12, 174, 300, 400, 500). Figures 5 and 6, and Specification at page 38, line 15 - page 40, line 4.

Two additional sensors (164, 166) located on the upper surface of the circuit board (20). The two additional sensors (164, 166) indicate the bidirectional movement of the secondary input member (16). Figures 5 and 6, and Specification at page 38, line 15 - page 40, line 4.

One additional sensor (110, 207.01, 207) located on the lower surface of the circuit board (20, 250, 422, 523). Figures 2, 3, 12, 16, 32, and 36 and Specification at page 34, lines 2-6, page 49, line 12-20; page 61, lines 15-18; and page 63, lines 4-5.

Two button sensors (136) located on the upper surface of the circuit board (20, 250, 422, 523) control at least a volume function. Figure 9, and Specification at page 28, lines 3-8; page 42, lines 3-7.

One button sensor (136) is located on the upper surface of the circuit board (20, 250, 422, 523) controls an ON/OFF function. Figure 9, and Specification at page 28, lines 3-8; page 42, lines 3-7.

The image controller (9, 172) further comprises a transmitter allowing wireless communication of information (138) from the controller (9, 172) to the image generation device

(148), the information is useful to control the image generation device (148). Figures 9 and 30, and Specification at page 40, lines 13-17, page 41, line 19 - page 42, line 1; page 42, lines 13-17; and page 60, lines 11-13.

The image controller (9, 172) further comprises a battery compartment (134) adapted to hold a battery for powering the image controller (9, 172). Figure 9, and Specification at page 42, line 1-2.

Claim 10 depends from claim 9 and further recites that the proportional sensor (124, 207) is of a capacitive type. Specification at page 15, lines 10-19.

Claim 11 depends from claim 9 and describes an image controller (9, 172) that further comprises two button sensors (136) located on the upper surface of the circuit board (20, 250, 422, 523) control channel switching. Figure 9, and Specification at page 28, lines 3-8; page 42, lines 3-7.

Claim 12 describes an image controller (9, 172) allowing control of an image generation device (148). The image generation device is capable of creating three-dimensional imagery (152). The specification discloses multiple exemplary embodiments of the image controller in Figures 1-3, 8, 9, 12, 20, 21, 30, 31, 32, and 36 and in the Specification at (image controller) page 10, line 15 - page 12, line 1; page 17, lines 3-14; page 27, lines 9-15; page 28, lines 3-12; page 43, lines 1-11; page 53, line 15 - page 54, line 3; and page 62, lines 19-22; (image generation device) page 10, lines 15-18; page 11, lines 4-12; page 40, lines 7-17; page 41, lines 19-22; page 42, lines 13-20; page 68, lines 11-15; and (three-dimensional imagery) page 10, line 18 - page 11, line 12; page 11, line 21 - page 12, line 1; page 41, line 18; and page 42, lines 13-15.

The image controller (9, 172) comprises a single input member (12, 174, 300, 400, 500) capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery (152). Figures 1-6, 8, 9, 11, 12, 20, 21, 31, 32, and 36 and Specification at page 27, lines 9-15; page 43, lines 1-11; page 54, lines 4-6; page 61, lines 6-14; and page 62, lines 19-22.

The image controller further comprises a circuit board (20, 206, 250, 322, 422, 523). Figures 2, 3, 15, 16, 22, 34, 36, and 45-47, and Specification at page 29, lines 9-12; page 40, lines 16-17; page 49, lines 12-20; page 56, lines 6-13; page 57, 16-18; page 61, lines 6-11; page

63, lines 4-5; and page 70, lines 17-20.

A proportional sensor (124, 207) communicates with the circuit board (20, 206, 250, 322, 422, 523). The proportional sensor (124, 207) indicates manipulation of the single input member (12, 174, 300, 400, 500). Figure 2, 3, 12, 20-28, and 32-36 and Specification at page 31, lines 2-5; page 32, lines 3-6; page 56, line 1 - page 59, line 15; and page 61, lines 6-11.

The image controller (9, 172) further comprises a secondary input member (16) capable of being controlled by the human hand to effect bidirectional control of imagery (152) independent of the control of the three-dimensional imagery (152) by the single input member (12, 174, 300, 400, 500). Figures 5 and 6, and Specification at page 38, line 15 - page 40, line 4.

Two secondary input member sensors (164, 166) communicate with the circuit board (20). The two secondary input member sensors (164, 166) indicate the bidirectional movement of the secondary input member (16). Figures 5 and 6, and Specification at page 38, line 15 - page 40, line 4.

Two button sensors (136) communicate with the circuit board (20, 250, 422, 523) to control at least a volume function. Figure 9, and Specification at page 28, lines 3-8; page 42, lines 3-7.

One button sensor (136) communicates with the circuit board (20, 250, 422, 523) to control an ON/OFF function. Figure 9, and Specification at page 28, lines 3-8; page 42, lines 3-7.

The image controller (9, 172) further comprises a transmitter allowing wireless communication of information (138) from the controller to the image generation device (148). Figures 9 and 30, and Specification at page 40, lines 13-17, page 41, line 19 - page 42, line 1; page 42, lines 13-17; and page 60, lines 11-13.

The image controller (9, 172) further comprises a battery compartment (134) adapted to hold a battery for powering the image controller (9, 172). Figure 9, and Specification at page 42, line 1-2.

Claim 13 depends from claim 12 and further recites that the proportional sensor (124, 207) is of a capacitive type. Specification at page 15, lines 10-19.

Claim 14 depends from claim 12 and describes an image controller (9, 172) that further comprises two button sensors (136) that communicate with the circuit board (20, 250, 422, 523)

to control channel switching. Figure 9, and Specification at page 28, lines 3-8; page 42, lines 3-7.

Claim 15 depends from claim 13 and describes an image controller (9, 172) that further comprises a second proportional sensor (126, 128, 207) indicating rotation of the single input member (12, 174, 300, 400, 500). Figure 2, 3, 12, 20-28, and 32-36 and Specification at page 31, lines 2-5; page 32, lines 3-6; page 56, line 1 - page 59, line 15; and page 61, lines 6-11.

Claim 16 depends from claim 9 and describes an image controller wherein the single input member (12, 174, 300, 400, 500) is manipulated relative to a reference member (10, 204, 317, 417, 517). Figures 1-4, 12, 13, 23 and 33-36 and Specification at page 27, lines 9-12; page 31, line 23, to page 32, line 2; page 43, lines 8-9; page 44, lines 5-8; page 45, lines 20-22; page 54, lines 5-6; page 57, lines 8-13; page 61. Lines 11-14; and page 62, line 19 through page 63, line 1.

Claim 17 depends from claim 11 and describes an image controller wherein the single input member (20, 174, 300, 400, 500) is manipulated relative to a reference member (10, 204, 317, 417, 517). Figures 1-4, 12, 13, 23 and 33-36 and Specification at page 27, lines 9-12; page 31, line 23, to page 32, line 2; page 43, lines 8-9; page 44, lines 5-8; page 45, lines 20-22; page 54, lines 5-6; page 57, lines 8-13; page 61. Lines 11-14; and page 62, line 19 through page 63, line 1.

Claim 18 depends from claim 12 and describes an image controller wherein the single input member (20, 174, 300, 400, 500) is manipulated relative to a reference member (10, 204, 317, 417, 517). Figures 1-4, 12, 13, 23 and 33-36 and Specification at page 27, lines 9-12; page 31, line 23, to page 32, line 2; page 43, lines 8-9; page 44, lines 5-8; page 45, lines 20-22; page 54, lines 5-6; page 57, lines 8-13; page 61. Lines 11-14; and page 62, line 19 through page 63, line 1.

Claim 19 depends from claim 13 and describes an image controller wherein the single input member (20, 174, 300, 400, 500) is manipulated relative to a reference member (10, 204, 317, 417, 517). Figures 1-4, 12, 13, 23 and 33-36 and Specification at page 27, lines 9-12; page 31, line 23, to page 32, line 2; page 43, lines 8-9; page 44, lines 5-8; page 45, lines 20-22; page 54, lines 5-6; page 57, lines 8-13; page 61. Lines 11-14; and page 62, line 19 through page 63, line 1.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Board is requested to consider the following grounds for reversal of the rejection:

(1) Whether the Examiner erred in finding that claims 9, 11-12, 14 and 16-18 are unpatentable over Copper (US 5,485,171) in view of Imai (US 5,521,617) and further in view of Elliott (US 5,291,325);

(2) Whether the Examiner erred in finding that claims 10, 13, 15 and 19 are unpatentable over Copper (US 5,485,171) in view of Imai (US 5,521,617) and further in view of Elliott (US 5,291,325) and Cox (US 4,719,538);

(3) Whether the Examiner erred in finding that claims 9, 11, 12 and 14 are unpatentable over Autry (US 5,724,106) in view of Hall (US 5,703,623), namely whether Autry and Hall are prior art to the present application; and

(4) Whether the Examiner erred in finding that claims 10, 13 and 15 are unpatentable over Autry (US 5,724,106) in view of Hall (US 5,703,623) and further in view of Schuster (5,623,099) namely whether Autry and Hall are prior art to the present application.

VII. ARGUMENT

Appellant traverses the Examiner's findings of fact for the Copper, Imai, Elliott, Cox Autry, Hall and/or Schuster references. Appellant also traverses the proposed combinations of the cited references and/or the status of the Autry, Hall and/or Schuster references as prior art.

A. Summary of Claimed Invention

In general, the claimed invention defines an image controller that allows a user to control an image generation device that is capable of creating three-dimensional imagery. Generally, the image controller comprises the following components: a single input member, a secondary input member, a circuit board, a proportional sensor indicating manipulation of the single input member, sensors for indicating movement of the secondary input member, additional sensors providing other functionality, a wireless transmitter, and a battery compartment.

The single input member is capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery. The secondary input

member is capable of being controlled by the human hand to effect bidirectional movement of the three-dimensional imagery on at least one axis independent of the control of three-dimensional imagery by the single input member.

The circuit board has an upper surface and a lower surface. A proportional sensor located on the upper surface of the circuit board indicates manipulation of the single input member. Two additional sensors located on the upper surface of the circuit board indicate bidirectional movement of the secondary input member.

Another additional sensor is located on the lower surface of the circuit board. Two button sensors are located on the upper surface of the circuit board and control at least a volume function. One button sensor is located on the upper surface of the circuit board and controls an ON/OFF function.

The transmitter allows wireless communication of information from the controller to the image generation device. The information is useful to control the image generation device. The battery compartment is adapted to hold a battery for powering the image controller.

In alternative embodiments of the invention, the first proportional sensor may be of a capacitive type, a second proportional sensor indicates rotation of the single input member, two button sensors located on the upper surface of the circuit board may control channel switching, and/or the single input member is manipulated relative to a reference member.

B. Cited References

The following references are cited in the Office Action to reject the pending claims:

U.S. Patent No. 5,485,171 to Copper, et al. (herein after "Copper")

U.S. Patent No. US 5,521,617 to Imai, et al. (hereinafter "Imai")

U.S. Patent No. US 5,291,325 to Elliott (hereinafter "Elliott")

U.S. Patent No. US 4,719,538 to Cox (hereinafter "Cox")

U.S. Patent No. 5,724,106 to Autry, *et al.* (hereinafter "Autry");

U.S. Patent No. 5,703,623 to Hall, *et al.* (hereinafter "Hall"); and

U.S. Patent No. 5,623,099 to Schuster, *et al.* (hereinafter "Schuster").

C. First Grounds on Appeal

Claims 9, 11-12, 14 and 16-18 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Copper in view of Imai, and further in view of Elliott. Appellant respectfully asserts that claims 9, 11-12, 14 and 16-18 are patentable over Copper in view of Imai and further in view of Elliott.

1. Independent claim 9

a. The cited combination fails to teach all elements

Claim 9 recites "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery," and "a secondary input member capable of being controlled by the human hand to effect bidirectional movement of the three-dimensional imagery on at least one axis independent of the control of three-dimensional imagery by the single input member." Appellant respectfully asserts that the cited combination of Copper, Imai and Elliott fails to teach these elements, particularly these elements in the recited relationship.

The Office Action asserts that both Copper and Imai teach "a single input member capable of being manipulated in six degrees of freedom by a human hand." The Office Action alleges that Copper teaches "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the two-dimensional imagery (12 in fig. 2; col. 7, lines 41-47)." However, the cited passage of Copper only teaches two dimensional, planer control of a two-dimensional image. The subsequently described embodiment of Fig. 21 of Copper does add a pair of initiation/ clicking switches, 120 and 218, which can be activated by downward pressure on control 12. However, these switches do not provide any sort of axial control that would provide control full six degrees of freedom. Regardless, control 12 of Copper only provides planer control with respect to the X-Y plan, with limited switching that may be arguably provided along a z-axis. However, nothing in Copper would suggest rotational control about any of these axes, thus control 12 of Copper fails to teach or suggest being manipulated in six degrees of freedom.

Additionally, the Office Action admits that Copper fails to teach or suggest "control of three-dimensional imagery." The Office action relies on Imai as teaching "a single input

member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery (trackball 21 is capable of being manipulated in six degrees of freedom and controls movement; fig. 3)." However, a review of Imai indicates that track ball 21 does not provide control in six degrees of freedom. Rather, trackball 21 provides control in only the X and Y-axes, while rotary ring 22 is relied upon in Imai to provide input to the Z-axis.

Hence, the combination of Copper and Imai fails to teach or suggest "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery" as recited by independent claim 9. (Elliot does not teach these elements, nor is it relied upon by the Office Action as teaching such elements.)

Further, the combination of Copper and Imai fails to teach or suggest "a secondary input member capable of being controlled by the human hand to effect bidirectional movement of the three-dimensional imagery on at least one axis independent of the control of three-dimensional imagery by the single input member," as recited by independent claim 9 The Office Action admits that Copper does not teach or suggest a secondary input member. The Office Action relies on Imai as teaching this element. However, as noted above, in Imai trackball 21 provides control only with respect to the X and Y-axes, while rotary ring 22 is relied upon in Imai to provide input with respect to the Z-axis. Thus, the rotary ring of Imai can only be said to teach bidirectional movement of the three-dimensional imagery on an axis that is not controlled by the single input member.

For all of the above reasons, the combination of Copper and Imai does not arrive at the subject matter of claim 9. Elliott is not cited for and does not make up for this deficiency in Copper and Imai. Elliott is cited for button sensors on the upper surface of the circuit board that control volume. Elliott therefore does not provide what is missing from the combination of Copper and Imai, a single input capable of being manipulated in six degrees of freedom by a human hand...."

b. Reasons for combining references insufficient

The stated reasoning for combining Copper and Imai to reach independent claim 9 is provided as:

> At the time of the invention it would have been obvious to one of ordinary skill in the art to include the secondary input member of Imai around the single input member of Copper and locate the sensors on the circuit board.
>
> The motivation for doing so would have been for the well-known benefits of increasing the functionality, displaying special 3D images and decreasing cost by locating the sensors on a single circuit board (Imai; col. 1, lines 15-22).

As pointed out above, the Office Action admits that Copper fails to teach or suggest "control of three-dimensional imagery." However, the stated motivation does not address how the inclusion of teachings from Imai would address this shortcoming. The stated motivation is insufficient to provide a reason to combine Imai with Copper to supplement the teachings of Copper with a "secondary input member," which is also admitted by the Office Action as missing from Copper. The proposed reasoning is to include Imai's secondary input member around the single input member of Copper, but the reasoning does not address how a hand holding the single input member of Copper would, or even could, operate both the single input member of Copper and the secondary input member of Imai so as to provide manipulation in six degrees of freedom by a human hand to control movement of the three-dimensional imagery as recited in claim 9. Proper reasoning must explain the benefit of the modification. Here the reasoning does not provide any rationale for how the combined apparatus is improved. It is evident that the proposed combination of adding Imai's rotary input member around Copper's single input member would result in a control that is not operable as intended by Copper. Copper states "the invention has incorporated many ergonomically advantageous human-computer interactions, such as the creation of a device which can be manipulated by a human user's natural pointing finger to select and control functions of a computer…." (see Copper, col. 2, lines 39-45). The reasoning in the office action instead of explaining how the alleged combination improves the resulting combined device provides only speculative general reasoning that is not applicable to the resulting combination. It is submitted that the alleged combination would not be operable by a human user's natural pointing finger and thus would degrade, not improve Copper's device. Accordingly, the proposed modification of Copper's device that would render the prior art (Copper's) device unsatisfactory for its intended purpose and such is evidence that the proposed combination is not obvious. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The reasoning, "increasing functionality" is vague to the point of being meaningless on its own. "Displaying special 3D images" is also vague, particularly the meaning of "special" in this context. Regardless, the displaying of 3D images would appear to be irrelevant to the inclusion of a secondary input member, and thus "displaying special 3D images" would not appear to provide any motivation for combining Copper and Imai (absent hindsight, drawing from Appellant's own disclosure). Finally, "decreasing cost by locating the sensors on a single circuit board" is vague and without support. The Office Action cites col. 1, lines 15-22 of Imai in support of the proposed motivation. However, the cited portion of Imai fails to mention such cost savings. For at least the above reasons, Appellant respectfully asserts that the motivation provided for combining Copper and Imai is insufficient.

The Office Action admits that the combination of Copper and Imai fails to teach or suggest button sensors to control volume. To address this deficiency the Office Action relies on Elliott. The motivation provided for adding Elliott to the combination of Copper and Imai is presented as:

> At the time of the invention it would have been obvious to one of ordinary skill in the art to include the button sensors of Elliott on the upper surface of the Coppery/Imai circuit board.
>
> The motivation for doing so would have been for the well-known benefit of increasing the functionality of the device and allowing it to also control the volume of the image generation device.

The stated motivation is insufficient to provide a reason to combine Elliott with Copper and Imai. The reasoning, "increasing the functionality of the device " is vague to the point of being meaningless on its own. As explained above, Copper desires his device to function by manipulation of a human user's natural pointing finger to select and control functions of a computer and adding Imai's secondary input member around the single input member of Copper would not increase this functionality.

Moreover, the reasoning of adding the volume control button sensors of Elliot for the purpose of allowing the device to "control the volume of the image generation device" is clearly circular in nature and provides not true motivation for modifying the combination of Copper and Imai (absent the application of impermissible hindsight, drawn from Appellant's own disclosure).

For all the above reasons, Appellant respectfully asserts that the combination of Copper, Imai and Elliot fails to teach or suggest all the elements of independent claim 9 and that the reasoning presented for combining Copper and Imai (much less Copper, Imai and Elliott) is woefully lacking. For at least the above reasons, Appellant asks the Board to reverse the rejection of independent claim 9.

2. Claim 11

Claim 11 depends directly from claim 9, and thereby inherits all elements of claim 9. Therefore, for at least the reasons discussed above with respect to independent claim 9, claim 11 includes elements not taught or suggested by the combination of Copper, Imai and Elliott, and/or is otherwise patentable over this combination. For this reason alone, Appellant respectfully asserts that claim 11 is allowable over the rejection of record.

Further, claim 11 recites "two button sensors located on the upper surface of the circuit board control channel switching." The Office Action relies on Elliott as teaching this element. The stated motivation for further modifying the combination of Copper and Imai to include the channel control buttons taught by the remote control in Elliot is "the well-known benefit of increasing the functionality of the device and allowing it to also control the channel of the image generation device." This statement of motivation provides no further increase in functionality other than to control the channel of the image generation device. Thus, the stated motivation is circular in nature and provides no real motivation for further modifying the combination (i.e. the motivation, at best, states it is desirable to add channel control buttons to control the channel of the device). Hence, the motivation provided to reach claim 11 is insufficient.

3. Independent claim 12

a. The cited combination fails to teach all elements

As with independent claim 9, independent claim 12 recites "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery;" and similar to independent claim 9, independent claim 12 recites "a secondary input member capable of being controlled by the human hand to effect bidirectional control of imagery independent of the control of the three-dimensional imagery by the single input member." As with independent claim 9 discussed above, Appellant respectfully

asserts that the cited combination of Copper, Imai and Elliott fails to teach these elements, particularly these elements in the recited relationship. And the Office Action does not explain how Copper's control (11) could be manipulated by a human user's natural pointing finger to provide six degrees of freedom as required by Appellant's claim 12

As noted above, the Office Action asserts that both Copper and Imai teach "a single input member capable of being manipulated in six degrees of freedom by a human hand." The Office Action asserts that Copper teaches "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the two-dimensional imagery (12 in fig. 2; col. 7, lines 41-47)." However, as also noted above, the cited passage of Copper teaches two dimensional, planer control of a two-dimensional image only, then Copper goes on to add a pair of initiation/ clicking switches, 120 and 218, which can be activated by downward pressure on control 12. However, these switches do not provide any sort of axial control that would provide control 12 full six degrees of freedom. Regardless, control 12 of Copper provides planer control with respect to the X-Y plan only, with limited switching that may be arguably provided along a z-axis. Despite the rocking of control 12 taught for providing X/Y-axis control, nothing in Copper would suggest <u>rotational</u> control about any of the axes as required for manipulation in six degrees of freedom, particularly the Z-axis. Thus, control 12 of Copper fails to teach or suggest being manipulated in six degrees of freedom.

Additionally, the Office Action admits that Copper fails to teach or suggest "control of three-dimensional imagery." The Office action relies on Imai as teaching "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery (trackball 21 is capable of being manipulated in six degrees of freedom and controls movement; fig. 3)." However, a review of Imai indicates that track ball 21 does not provide control in six degrees of freedom. Rather, trackball 21 provides control with respect to the X and Y-axes only, while rotary ring 22 is relied upon in Imai to provide input with respect to the Z-axis.

Hence, the combination of Copper and Imai fails to teach or suggest "a <u>single</u> input member capable of being manipulated in six degrees of freedom by a human hand <u>to control movement of the three-dimensional imagery</u>" as recited by independent claim 9. (The remote control of Elliot does not teach these elements, nor is it relied upon by the Office Action as

teaching such elements.)

Further, the combination of Copper and Imai fails to teach or suggest "a secondary input member capable of being controlled by the human hand to effect bidirectional control of imagery independent of the control of the three-dimensional imagery by the single input member," as recited by independent claim 12 The Office Action admits that Copper does not teach or suggest a secondary input member. The Office Action relies on Imai as teaching this element. However, as noted above, in Imai, trackball 21 provides control with respect to the X and Y-axes only, while rotary ring 22 is relied upon in Imai to provide input with respect to the Z-axis. Thus, the rotary ring of Imai can only be said to teach bidirectional movement of the three-dimensional imagery on an axis that is <u>not</u> controlled by the single input member. (The remote control of Elliot does not teach these elements, nor is it relied upon by the Office Action as teaching such elements.)

b. Reasons for combining references insufficient

Just as noted above in addressing the reasoning presented by the Office Action to combine Copper, Imai and Elliott to reach independent claim 9, Appellant respectfully asserts that the stated reasoning for combining Copper and Imai to reach independent claim 12 is insufficient. As pointed out above, the stated motivation does not seem to address the inclusion of teachings from Imai to address the combination of "control of three-dimensional imagery" from Imai with Copper. Regardless, the Office Action admits that Copper fails to teach or suggest a "secondary input member," and the above-quoted motivation to combine Copper and Imai is insufficient to provide a reason to add the rotary ring taught by Imai to Copper. In particular, the reasoning, "increasing functionality" is vague to the point of being meaningless on its own. "Displaying special 3D images" also seems vague, particularly the meaning of "special" in this context. Regardless, the displaying of 3D images would appear to be irrelevant to the inclusion of secondary input member, and thus "displaying special 3D images" would not appear to provide any motivation for combining Copper and Imai (absent hindsight, drawn from Appellant's own disclosure). Finally, "decreasing cost by locating the sensors on a single circuit board" seems vague and without support. The Office Action cites col. 1, lines 15-22 of Imai in support of this stated motivation. However, the cited portion of Imai fails to mention such cost savings. For at least the above reasons, Appellant respectfully asserts that the motivation

provided for combining Copper and Imai is insufficient.

As also discussed above with respect to independent claim 9, the Office Action admits that the combination of Copper and Imai fails to teach or suggest button sensors to control volume. To address this deficiency the Office Action relies on Elliott. The above-quoted motivation to add Elliot is insufficient to provide a reason to combine Elliott with Copper and Imai. The reasoning, "increasing the functionality of the device " is vague to the point of being meaningless on its own, while, the reasoning of adding the volume control button sensors of Elliot for the purpose of allowing the device to "control the volume of the image generation device" is clearly circular in nature and provides not true motivation for modifying the combination of Copper and Imai (absent the application of impermissible hindsight, drawn from Appellant's own disclosure).

For all the above reasons, Appellant respectfully asserts that the combination of Copper, Imai and Elliot fails to teach or suggest all the elements of independent claim 12 and that the reasoning presented for combining Copper and Imai (much less Copper, Imai and Elliott) is woefully lacking. For at least the above reasons, Appellant asks the Board to reverse the rejection of independent claim 1.

4. Claim 14

Claim 14 depends directly from claim 12, and thereby inherits all elements of claim 12. Therefore, for at least the reasons discussed above with respect to independent claim 12, claim 14 includes elements not taught or suggested by the combination of Copper, Imai and Elliott, and/or is otherwise patentable over this combination. For this reason alone, Appellant respectfully asserts that claim 14 is allowable over the rejection of record.

Similar to claim 11 discussed above, claim 14 recites, "two button sensors located on the upper surface of the circuit board control channel switching." The Office Action relies on Elliott as teaching this element. As with claim 11, discussed above, the stated motivation for further modifying the combination of Copper and Imai to include the channel control buttons taught by the remote control in Elliot is "the well-known benefit of increasing the functionality of the device and allowing it to also control the channel of the image generation device." This statement of motivation provides no further increase in functionality than to control the channel of the image generation device. Thus, the stated motivation is circular in nature and provides no

real motivation for further modifying the combination (i.e. the motivation, at best, states it is desirable to add channel control buttons to control the channel of the device). Hence, the motivation provided to reach claim 14 is insufficient.

5. Claim 16

Claim 16 depends directly from independent claim 9, and thereby inherits all elements of claim 9. Therefore, for at least the reasons discussed above with respect to independent claim 9, claim 16 includes elements not taught or suggested by the combination of Copper, Imai and Elliott, and/or is otherwise patentable over this combination. For this additional reason, Appellant further respectfully asserts that claim 16 is allowable over the rejection of record.

6. Claim 17

Claim 17 depends from claim 11, and thereby inherits all elements of claim11, and independent claim 9. Therefore, for at least the reasons discussed above with respect to claim 11 and independent claim 9, claim 17 includes elements not taught or suggested by the combination of Copper, Imai and Elliott, and/or is otherwise patentable over this combination. For this additional reason, Appellant further respectfully asserts that claim 17 is allowable over the rejection of record.

7. Claim 18

Claim 18 depends from independent claim 12, and thereby inherits all elements of claim 12. Therefore, for at least the reasons discussed above with respect to claim 12, claim 18 includes elements not taught or suggested by the combination of Copper, Imai and Elliott, and/or is otherwise patentable over this combination. For this additional reason, Appellant further respectfully asserts that claim 18 is allowable over the rejection of record.

D. Second Grounds on Appeal

Appellant respectfully asserts that claims 10, 13, 15 and 19 are patentable over Copper, in view of Imai, and further in view of Elliott and Cox.

1. Claim 10

Claim 10 recites, "said proportional sensor is of a capacitive type." In addressing this claim (and claim 13), the Office Action states:

> At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the resistive sensors of Copper with the capacitive accelerometers of Cox.
>
> The motivation for doing so would have been to provide simplified construction and lower costs (Cox; col. 2, lines 23-27).

Appellant respectfully asserts that this reasoning for replacing the resistive sensors of Copper with the capacitive sensors of Cox is erroneous and unsupported. In particular, there is a complete lack of evidence supporting the alleged motivation. First, there is no evidence of (1) the per-item cost of resistive sensors compared to capacitive accelerometers or (2) the construction requirements or costs of installing resistive sensors compared to capacitive accelerometers.

In making a rejection based on 35 U.S.C.103, the Examiner has the initial duty of supplying the requisite factual basis and may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. See, *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). This principle was affirmed by the Court's statement that "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S 398 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). It is apparent that the proposed modification of Copper to provide the accelerometers disclosed by Cox is not motivated by some teaching or suggestion in the prior art. Rather the combination was constructed only after a hindsight review of the Appellant's disclosure. The office action does not supply a factual basis for the rejection, but relies on speculation for suggesting the combination

Accordingly, there is no basis to show that the proposed substitution would either simplify construction or lower costs. Second, the cited passage in the Cox reference merely identifies a <u>need</u> for simplified construction and lower costs, but fails to provide evidence of such simplification and savings by replacing resistive sensors with capacitive accelerometers.

In fact, based upon the relative complexity of these components, it seems very unlikely that construction could be simplified by replacing resistive sensors with capacitive sensors, or that costs could be reduced by such a substitution.

Regardless, claim 10 depends directly from independent claim 9, and thereby inherits all elements of claim 9. Therefore, for at least the reasons discussed above with respect to independent claim 9, claim 10 includes elements not taught or suggested by the combination of Copper, Imai, Elliott and Cox, and/or is otherwise patentable over this combination. For the above reasons, Appellant respectfully asserts that claim 10 is allowable over the rejection of record.

2. Claim 13

Claim 13 also recites, "said proportional sensor is of a capacitive type." In addressing this claim, the Office Action also states:

> At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the resistive sensors of Copper with the capacitive accelerometers of Cox.
>
> The motivation for doing so would have been to provide simplified construction and lower costs (Cox; col. 2, lines 23-27).

Appellant again respectfully asserts that this reasoning for replacing the resistive sensors of Copper with the capacitive sensors of Cox is erroneous and unsupported. In particular, there is a complete lack of evidence supporting the alleged motivation. First, there is no evidence of (1) the per-item cost of resistive sensors compared to capacitive accelerometers or (2) the construction requirements or costs of installing resistive sensors compared to capacitive accelerometers. Accordingly, there is no basis to show that the proposed substitution would either simplify construction or lower costs. Second, the cited passage in the Cox reference merely identifies a <u>need</u> for simplified construction and lower costs, but fails to provide evidence of such simplification and savings by replacing resistive sensors with capacitive accelerometers.

In fact, based upon the relative complexity of these components, it seems very unlikely that construction could be simplified by replacing resistive sensors with capacitive sensors, or that costs could be reduced by such a substitution.

Regardless, claim 13 depends directly from independent claim 12, and thereby inherits all

elements of claim 12. Therefore, for at least the reasons discussed above with respect to independent claim 12, claim 13 includes elements not taught or suggested by the combination of Copper, Imai, Elliott and Cox, and/or is otherwise patentable over this combination. For the above reasons, Appellant respectfully asserts that claim 13 is allowable over the rejection of record.

3. Claim 15

Claim 15 recites, "a second proportional sensor indicating rotation of the single input member." In addressing this claim, the Office Action states:

> Copper further discloses, a second proportional sensor (X axis strip) indicating rotation of the single input member (the input member "rocks" col. 8, lines 34-37; such rocking would result in a rotation about the pivot).

As noted above, Copper only teaches two dimensional, planer control of a two-dimensional image. No teaching in Copper provides any sort of axial control that would provide control of a full six degrees of freedom. Regardless, the X-axis strip in Copper is used for providing position information along an x-axis, not around such an axis. See, Copper, Col. 5, lines 51-53, which describes "position transducer 15 located and electrically connected to represent the X and Y axes of a Cartesian coordinate system;" and lines 65-66, which explain that the "position transducer comprises an X axis resistance strip 16 and a Y axis resistance strip 17." Thus, it is clear that cited X-axis strip 16 provides planar Cartesian coordinate information, not rotation information. Therefore, the combination of Copper, Imai, Elliott and Cox fails to teach or suggest "a second proportional sensor indicating rotation of the single input member," as recited by claim 15.

Additionally, claim 15 depends directly from claim 13, and thereby inherits all elements of claim 13 and independent claim 12. Therefore, for at least the reasons discussed above with respect to claim 13 and independent claim 12, claim 15 includes elements not taught or suggested by the combination of Copper, Imai, Elliott and Cox, and/or is otherwise patentable over this combination. For the above reasons, Appellant respectfully asserts that claim 15 is allowable over the rejection of record.

4. Claim 19

Claim 19 depends from claim 13 and thereby inherits all elements of claim 13, and independent claim 12. Therefore, for at least the reasons discussed above with respect to claim 13 and independent claim 12, claim 19 includes elements not taught or suggested by the combination of Copper, Imai, Elliott and Cox, and/or is otherwise patentable over this combination. For the above reasons, Appellant respectfully asserts that claim 19 is allowable over the rejection of record.

E. Third Grounds on Appeal

The Office Action rejects claims 9, 11-12 and 14 under 35 U.S.C. 103(a) as being unpatentable over Autry in view of Hall. Appellant respectfully asserts that claims 9, 11, 12 and 14 are patentable over Autry in view of Hall, and specifically that Autry and Hall are not prior art to the present application.

1. Autry and Hall are not Prior Art

On July 27, 2010 Appellant submitted a Declaration by the Inventor of prior invention under 37 CFR §1.131, "swearing behind" Autry, Hall and Schuster. The Office Action asserts that there are minor informalities with the declaration filed on July 27, 2010. Namely, the Office Action asserts that the declaration did not reveal any assertion by the Appellant that the invention was conceived and completed in the United States or any other NAFTA/WTO country, and that there is no assertion by the Appellant that the invention was reduced to practice prior to the date of the Autry, Hall and Schuster references.

First, with respect to the place of invention, Appellant asserts that the Declaration filed July 27, 2010 satisfies the requirements of 37 CFR §1.131, which merely states:

> Prior invention may not be established under this section in any country other than the United States, a NAFTA country, or a WTO member country. Prior invention may not be established under this section before December 8, 1993, in a NAFTA country other than the United States, or before January 1, 1996, in a WTO member country other than a NAFTA country.

There is no requirement for an explicit statement of the location of the inventive process. By executing the July 27, 2010 Declaration under 37 C.F.R. §1.131 the Inventor implicitly declared,

under the penalties of 18 U.S.C. §10001, that his prior invention was made in the United States, a NAFTA country, or a WTO member country. Moreover, since the Declaration relies on the filing of a United States patent application to establish reduction to practice, it is clear that invention occurred in the United States.

Nevertheless, Appellant is submitting with this Appeal Brief a revised Declaration by the Inventor of prior invention under 37 CFR §1.131. Therein, Appellant explicitly spells out that invention took place in the United States. The Examiner should enter this revised Declaration since it removes both the Third and Fourth Grounds of Appeal in this case. Further, upon a finding that the claims are allowable over the rejections addressed in the First and Second Grounds of Appeal, above, entry of the revised Declaration would clearly resolve all rejections under appeal and place the present case in condition for allowance.

Second, the Office Action states: "Additionally, there is no assertion by the Applicant that the invention was reduced to practice prior to the date of the Autry, Hall and Schuster references. The Applicant has merely states that conception alone occurred prior to the date of the references." The Office Action relies on an erroneous standard here. It is well established that diligent constructive reduction to practice is sufficient to establish prior invention. M.P.E.P. § 715.07(III)(C) provides that an applicant can show prior invention by showing "(C) conception of the invention prior to the effective date of the reference coupled with due diligence from prior to the reference date to the filing date of the application (constructive reduction to practice)." In the Declaration the Inventor declares: "I conceived of the invention claimed in the '025 Application [the present application] at least as early as January 24. 1996 (the filing date of the U.S. Patent No. 5,703,623 to Hall. et al., which is cited as prior art against the claims of the present '025 Application). I worked diligently from that time to file a patent application for my invention." The Declaration also attaches evidence to support the assertion of conception and reduction to practice, namely a copy of issued related U.S. Pat. No. 5,565,891.

For the above reasons, Appellant respectfully asserts that Appellant has sufficiently established that the Inventor has shown prior invention of the claimed subject matter before the effective prior art date of Autry and Hall. Therefore Appellant respectfully asserts that claims 9, 11, 12 and 14 are patentable over Autry in view of Hall.

2. The cited combination fails to teach all elements

Independent claims 9 and 12 recite "a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery." Independent claim 9, also recites "a secondary input member capable of being controlled by the human hand to effect bidirectional movement of the three-dimensional imagery on at least one axis independent of the control of three-dimensional imagery by the single input member." Meanwhile, independent claim 12 similarly recites "a secondary input member capable of being controlled by the human hand to effect bidirectional control of imagery independent of the control of the three-dimensional imagery by the single input member."

The Office Action admits that Autry fails to teach or suggest three-dimensional imagery creation and a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery. The Office Action relies on Hall as teaching these elements missing from Autry. However, the Office Action fails to address how the secondary input member allegedly taught by Autry can "effect bidirectional movement of the three-dimensional imagery on at least one axis independent of the control of three-dimensional imagery by the single input member" if Autry fails to teach three dimensional imagery creation or the single input member. Hall is not relied upon as teaching this element of the independent claims.

Further, Hall is cited as teaching "a single input member (1 in fig. 2) capable of being manipulated in six degrees of freedom by a human hand (device is clearly capable of being manipulated in six degrees of freedom by a human hand) to control movement of the three-dimensional imagery… (col. 6, lines 42-51)." However, Appellant respectfully points out that it is the device itself in Hall that is capable of being manipulated in six degrees of freedom, not an input member.

For at least the above reasons, Appellant respectfully asserts that the combination of Autry and Hall fails to address all elements of independent claims 9 and 12.

3. Reasons for combining references insufficient

The reasoning for combining Autry and Hall is presented as: "The motivation for doing so would have been low manufacturing cost and to meet future 3D multimedia applications

(Hall; col. 1, lines 34-43)." However, the Office Action fails to explain how the proposed combination would lower cost. In fact it would appear that incorporation of the complicated "plurality of polymer thinfilm piezoelectric sensors, and a plurality of semiconductor Hall-effect sensors" required in Hall (*see e.g.*, Hall at Abstract) into the remote control disclosed by Autry would significantly raise costs. Further, any motivation "to meet future 3D multimedia applications" is either illusory or is drawn from Appellant's disclosure using impermissible hindsight. In particular, "future 3D multimedia applications" are, by definition, unknown at the time of invention, it seems improbable that they could be motivation for modifying references.

The reasons proposed by the examiner to meet the above-noted claim limitations stems, not from a proper rationale, but from improper hindsight knowledge derived from the appellant's own disclosure. For at least these reasons, Appellant respectfully asserts that the Office Action fails to provide a sufficient reason for combining Autry and Hall fails to address independent claims 9 and 12.

4. Dependent claims

Claim 11 depends directly from independent claim 9 and claim 14 depends directly from independent claim 12. Thereby, claim 11 inherits all elements of claim 9 and claim 14 inherits all elements of claim 12. Therefore, for at least the reasons discussed above with respect to independent claims 9 and 12, claims 11 and 14 include elements not taught or suggested by the combination of Autry and Hall, and/or are otherwise patentable over this combination. Thus, Appellant respectfully asserts that claims 11 and 14 are also allowable over the combination of Autry and Hall.

F. Fourth Grounds on Appeal

Appellant respectfully asserts that claims 10, 13 and 15 are patentable over Autry in view of Hall and further in view of Schuster, and specifically that Autry, Hall and Schuster are not prior art to the present application.

As discussed above with respect to the rejections of claims 9, 11-12 and 14, Appellant submitted a Declaration by the Inventor of prior invention under 37 CFR §1.131, "swearing behind" Autry, Hall and Schuster, on July 27, 2010. As also discussed above, Appellant

respectfully asserts that that the Declaration filed July 27, 2010 satisfies the requirements of 37 CFR §1.131, but as a safeguard measure Appellant is submitting with this Appeal Brief a revised Declaration by the Inventor of prior invention under 37 CFR §1.131. Thus, Appellant respectfully asserts that the Inventor has shown prior invention of the claimed subject matter before the effective prior art date of Autry, Hall and Schuster, and Appellant respectfully asserts that claims 10, 13 and 15 are patentable over Autry, in view of Hall, and further in view of Schuster.

Claim 10 depends directly from independent claim 9; claim 13 depends directly from independent claim 12; and claim 15 also depends from independent claim 12, through claim 13. Thereby, claim 10 inherits all elements of claim 9 and claims 13 and 15 inherit all elements of claim 12. Therefore, for at least the reasons discussed above with respect to independent claims 9 and 12, claims 10, 13 and 15 include elements not taught or suggested by the combination of Autry and Hall, and/or are otherwise patentable over this combination. The inclusion of Schuster to the combination of Autry and Hall fails to meet these deficiencies. For these additional reasons, Appellant respectfully asserts that claims 10, 13 and 15 are allowable over the combination of Autry, Hall and Schuster.

VIII. Conclusion

For all the reasons discussed above, the rejections of claims 9-19 should be reversed.

Respectfully submitted,

March 25, 2011
Date

/Michael J. Fogarty, III/
Michael J. Fogarty, III
Attorney for Appellant
Reg. No. 42,541

FOGARTY, L.L.C.
3010 LBJ Freeway, Suite 1200
Dallas, Texas 75234
214-722-8983
214-272-2778 (fax)

CLAIMS APPENDIX

1-8. (Canceled)

9. (Previously Presented) An image controller allowing control of an image generation device capable of creating three-dimensional imagery, the image controller comprising:

a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery;

a circuit board having an upper surface and a lower surface;

a proportional sensor located on the circuit board, the proportional sensor indicates manipulation of the single input member;

a secondary input member capable of being controlled by the human hand to effect bidirectional movement of the three-dimensional imagery on at least one axis independent of the control of three-dimensional imagery by the single input member;

two additional sensors located on the upper surface of the circuit board, the two additional sensors indicate the bidirectional movement of the secondary input member;

one additional sensor located on the lower surface of the circuit board;

two button sensors located on the upper surface of the circuit board control at least a volume function;

one button sensor located on the upper surface of the circuit board controls an ON/OFF function;

a transmitter allowing wireless communication of information from the controller to the image generation device, the information is useful to control the image generation device; and

a battery compartment adapted to hold a battery for powering the image controller.

10. (Previously Presented) The image controller of claim 9, wherein said proportional sensor is of a capacitive type.

11. (Previously Presented) The image controller of claim 9, further comprising:

two button sensors located on the upper surface of the circuit board control channel switching.

12. (Previously Presented) An image controller allowing control of an image generation device, the image generation device capable of creating three-dimensional imagery, the image controller comprising:

a single input member capable of being manipulated in six degrees of freedom by a human hand to control movement of the three-dimensional imagery;

a circuit board;

a proportional sensor communicates with the circuit board, the proportional sensor indicates manipulation of the single input member;

a secondary input member capable of being controlled by the human hand to effect bidirectional control of imagery independent of the control of the three-dimensional imagery by the single input member;

two secondary input member sensors communicate with the circuit board, the two secondary input member sensors indicate the bidirectional movement of the secondary input member;

two button sensors communicate with the circuit board to control at least a volume function;

one button sensor communicates with the circuit board to control an ON/OFF function;

a transmitter allowing wireless communication of information from the controller to the image generation device; and

a battery compartment adapted to hold a battery for powering the image controller.

13. (Previously Presented) The image controller of claim 12, wherein said proportional sensor is of a capacitive type.

14. (Previously Presented) The image controller of claim 12, further comprising:

two button sensors communicate with the circuit board to control channel switching.

15. (Previously Presented) The image controller of claim 13, further comprising:

a second proportional sensor indicating rotation of the single input member.

16. (Previously Presented) The image controller of claim 9, wherein the single input member is manipulated relative to a reference member.

17. (Previously Presented) The image controller of claim 11, wherein the single input member is manipulated relative to a reference member.

18. (Previously Presented) The image controller of claim 12, wherein the single input member is manipulated relative to a reference member.

19. (Previously Presented) The image controller of claim 13, wherein the single input member is manipulated relative to a reference member.